

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (Currently amended) An isolated nucleic acid encoding a beta subunit polypeptide of a potassium channel, wherein the beta subunit polypeptide:

(i) forms, with at least one alpha subunit polypeptide, a Slo potassium channel;  
and

(ii) comprises an amino acid sequence that has greater than ~~70%~~ 80% identity to the ~~S1-S2 region of BK-beta 3 (amino acids 20-191 of SEQ ID NO:3), or BK-beta 4 (amino acids 50-217 of SEQ ID NO:5.~~

2. (Currently amended) The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide that specifically binds to polyclonal antibodies generated against a polypeptide comprising an amino acid sequence of ~~SEQ ID NO: 3, or~~ SEQ ID NO:5.

3-5. (Canceled)

6. (Currently amended) The isolated nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide comprising an amino acid sequence of ~~SEQ ID NO:3, or~~ SEQ ID NO:5.

7. (Currently amended) The isolated nucleic acid sequence of claim 1, wherein the nucleic acid comprises a nucleotide sequence of ~~SEQ ID NO:4, or~~ SEQ ID NO:6.

8-22. (Canceled)

23. (Original) An expression vector comprising the nucleic acid of claim 1.

24. (Currently amended) A An isolated host cell transfected with the vector of claim 23.

25-56. (Canceled)